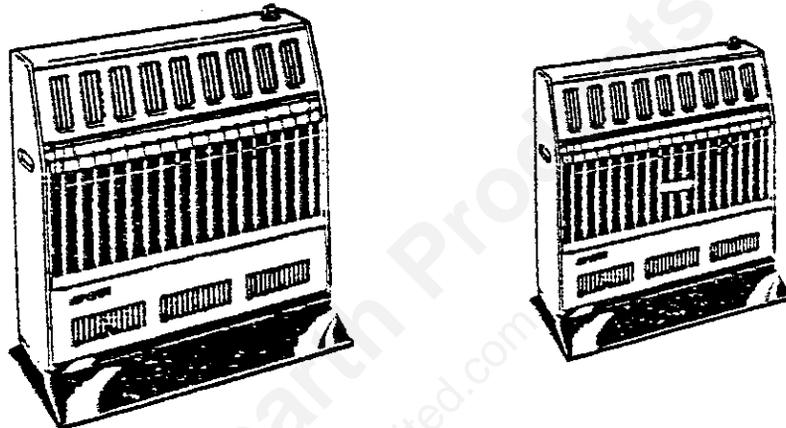


# CAVALIER BLUE FLAME UNVENTED GAS HEATER

## OWNER'S OPERATION AND INSTALLATION MANUAL

MODEL NO: FA-18000N.G. FA-28000N.G. FGH-28000N.G.(GARAGE HEATER)  
FB-18000L.P. FB-28000L.P. FGH-28000 L.P.(GARAGE HEATER)



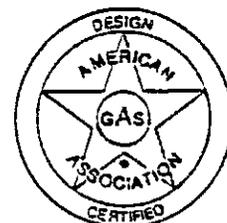
- CAREFULLY READ THIS MANUAL TO UNDERSTAND ALL INSTRUCTIONS ABOUT HOW TO INSTALL AND OPERATE THIS GAS HEATER.
- NEVER USE THIS HEATER IN BEDROOMS, AUTOMOBILES, TRAILERS, RECREATIONAL VEHICLES / MOBIL HOMES, ETC.
- ALWAYS KEEP THIS MANUAL FOR REFERENCE.

### \*\*\*WARNING\*\*\*

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- WHAT TO DO IF YOU SMELL GAS
  - Do not try to light any appliance.
  - Do not touch any electrical switch; do not use any home in your building.
  - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
  - If you can not reach your gas supplier, call the fire department.
- Installation and service must be performed by a qualified installer, service agency, or the gas supplier.

### IMPORTANT FOR YOUR SAFETY

- If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury, or loss of life
- Improper installation, adjustment, alteration, service, or maintenance can cause injury or property damage. Refer to this manual for correct installation and operational procedures. For assistance or additional information, consult a qualified installer, service agency, or the gas supplier.



United States Stove Company  
227 Industrial Park Road  
South Pittsburg, TN 37380

Tel: (800) 750-2723 [www.unitedstatesstove.com](http://www.unitedstatesstove.com)

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**\*\*\* WARNING \*\*\***

**IMPORTANT**

Before installing this heater, read all instructions in this manual carefully. Check all local codes.

The oxygen depletion safety system allows safe vent-free operation.

When the normal oxygen content (20.9%) is reduced to 18%, the pilot and main burner will turn off and cannot be relit.

When the pilot flame is extinguished by wind or interruption of gas supply, it will also turn off. Relighting is possible in this condition.

**WARRANTY**

**VENT-FREE GAS HEATER LIMITED WARRANTY**

The warranty is limited to one year from the date of purchase, to the original owner of this vent free gas heater, if installed and operated according to our printed instructions. This product will perform under normal conditions, the function for which it was designed and manufactured. For the warranty period, if this product should fail to perform its function because of any defect in materials or workmanship, we will correct such defect by replacement, or other means considered appropriate, as indicated in this warranty. Cost involved in removing or replacing and returning parts for examination are not covered by this warranty. The installer is responsible for proper installation of the vent-free heater. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. No one is authorized to make any representations as to this product except as contained herein.

## IMPORTANT SAFETY RULES

1. It is **IMPORTANT** to follow these rules to avoid fire hazard, property damage, bodily injury or death from a malfunction of the heater. For **SAFETY, READ** all rules carefully and check local codes.
2. It is **PROHIBITED** to install the heater in a bedroom, trailer, or recreational vehicles/mobile homes, etc. If installed in a garage or basement, heater must be 24" above the floor.
3. Due to high temperatures, place the heater out of traffic and keep it away from clothing, curtains, draperies and furniture.
4. Children should be carefully supervised when they are in the same room with the heater. Adults and children should stay away from the appliance to avoid burns and clothing ignition from high surface temperature.
5. Do not place clothing or other flammable material on or near appliances.
6. Installation and repair should be done by a qualified service person. This heater should be inspected before use and at least annually by a professional service person. More frequent cleaning may be required due to excessive dust lint, carpeting or other materials. It is imperative that control compartments, burners and circulating air passageways of this heater be kept clean.
7. For long term use and smooth operation of the heater, annual maintenance and/or frequent **CLEANING** is required to remove accumulated dust, lint, etc. from carpeting or other sources.
8. **"WARNING:** Any changes to this heater or its controls can be dangerous."
9. The heater is equipped with the specific orifice to fit the type of gas listed on the name plate. Only use the type of gas approved for this heater. Do not convert this heater to use a different type fuel.
10. Be sure to provide fresh air to the room with a heater for complete combustion. The opening should have at least one square inch of **FREE AIR** opening per 1000 BTU/hour output of heater. Never operate this heater in a small, closed room. Open a door to the next room to help with ventilation.
11. Any safety screen or guard removed for servicing this heater must be replaced prior to operation the heater.
12. **CHECK** all joints or connections. You may use soap suds. Never check gas leakage with an open flame, to avoid the danger of fire, accident or explosion.
13. Turn off heater and let cool before servicing. Only a qualified service

**IMPORTANT  
SAFETY RULES  
(CONTINUED)**

- person should service and repair heater.
14. **CLEAN** the area where the heater is placed and **KEEP AWAY FROM** flammable materials, gasoline and other combustible liquids and vapors.
  15. Since the vent-free gas heaters may easily increase the amount of humidity in the room, the larger the burner size the more humidity present. This can cause excessive moisture accumulation on windows and other surfaces.
  16. If L.P. gas is required, the L.P. supply tank must be placed outside the house. It must be installed in a well venticatted area away from the house. The distances must be placed as prescribed by the law. Check local and state codes and laws in order to comply with proper safety requirements.

**PRODUCT  
IDENTIFICATION**

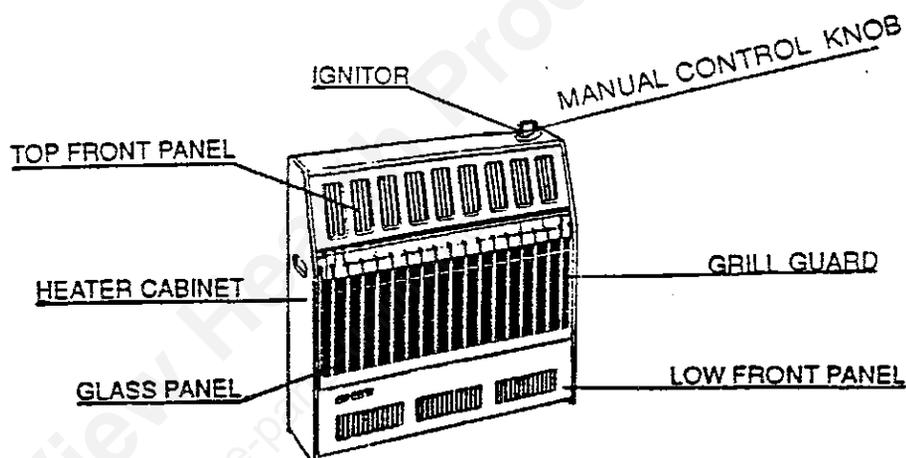


Figure 1

**LOCAL CODES**

Install and use heater with care. Follow all local codes. In the absence of local codes, use the latest edition of the National Fuel Gas Code ANSIZ223, also known as NFPA 54\*.

\*Available from:

American National Standards Institute, Inc.  
1430 Broadway  
New York, NY 10018

National Fire Protection Association, Inc.  
Batterymarch Park  
Quincy, MA 02269

**PRODUCT  
FEATURES**

**SAFETY DEVICE**

This unit has a pilot with an Oxygen Depletion Sensor Shutoff System(ODS). the ODS/pilot is a required feature for vent-free room heaters. The ODS/pilot shuts off the heater if there is not enough fresh air.

**PRODUCT  
FEATURES  
(CONTINUED)**

**PIEZO IGNITION SYSTEM**

This unit has a piezo ignitor. This system requires no matches, batteries, or other sources to light the heater.

**THERMOSTATIC HEAT CONTROL**

Thermostat models have a thermostat sensing bulb and a control valve. This results in the greatest heat comfort. This can also result in lower gas bills.

**SPECIFICATIONS**

	<b>18,000BTU/Hr</b>	<b>28,000BTU/Hr</b>
Model No.	FA-18000N.G. (Natural gas only) FB-18000L.P. (Propane gas only)	FA-28000 N.G. /FGH-28000N.G. (Natural gas only) FB-28000 L.P./FGH-28000L.P. (Propane gas only)
B.T.U (Variable)	9,000/18,000	14,000/28,000
Ignition	Piezo	Piezo
Max. Gas Inlet Pressure	14"W. C.	14"W. C.
Min. Gas Inlet Pressure	11"W. C.	11"W. C.
Pressure Regulator Setting	8"W. C.	8"W. C.
Dimensions, Inches (HxWxD)		
Heater	23 x 18.75 x 7	23 x 26.25 x 7
Carton	25.5 x 21 x 9	25.5 x 28.5 x 9
Weight (pound)		
Heater	23.5	28
Shipping	28.5	33

**REMARK:** Reduce rating 4% for each 1000 feet exceeded sea level. If elevation above 2000 feet, This heater may shutoff by an ODS.

**BTUH** means "Heater Rating in British Thermal units Per Hour"

**LP** means "Liquified petroleum"

**WARNING**

This heater must have fresh air for proper operation. If not, poor fuel combustion could result. Read the following instructions to insure proper fresh air for this and other fuel-burning appliances in your home.

**DANGER**

**CARBON MONOXIDE POISONING MAY LEAD TO DEATH!!!**

**NOTICE**

A qualified service person must install heater. Follow all local codes.

## SPECIFICATIONS

### CHECK GAS TYPE

Use only Natural gas. If your gas supply is not Natural gas, do not install heater. Call dealer where you bought heater for proper type heater.

## INSTALLATION

### INSTALLATION ITEMS

Before installing heater, make sure you have the items listed below.

- \*piping(check local codes)
- \*sealant(resistant to propane gas)
- \*manual shutoff valve
- \*ground joint union
- \*test gauge connection
- \*sediment trap
- \*tee joint
- \*pipe wrench

### LOCATING HEATER

This heater is designed to be mounted on a wall. Also you can locate this heater on floor, away from a wall. An optional floor mounting stand is needed.

Purchase the floor mounting stand from your dealer. See accessories, page.

### WARNING

#### Never install the heater

- \*In a bedroom or a bathroom.
- \*In a mobile home or a recreational vehicle.
- \*Where curtains, furniture, clothing, or other flammable objects are less than 36 inches from the front, top, or sides of the heater.
- \*As a fireplace insert.
- \*In high traffic areas.
- \*In windy or drafty areas.

### CAUTION

This heater creates warm air currents. These currents move heat to wallsurfaces next to heater. Installing heater next to vinyl or cloth wall coverings or operating heater where impurities in the air (such as tobacco smoke) exist, may discolor walls.

### SUFFICIENT VENTILATION

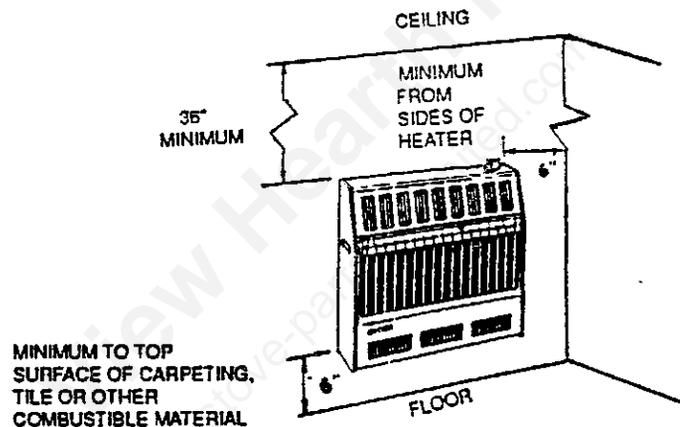
1. Be sure that room has fresh air suitable for proper combustion.

## INSTALLATION (CONTINUED)

2. Houses with loose structures, such as houses made of wood, easily get enough air through the wall spaces and door or window frames.
3. Houses of tight structure with storm windows and doors, supply outside air into the room where the heater is installed or use an exhaust fan.
4. For proper combustion in the heater, provide fresh air opening(s) to the room. The opening(s) must have one square inch of free opening for each 1000 BTUH of output. heater to room)

### PREPARING FOR INSTALLATION

Select a location for the heater that will provide exposure of the radiant surface to the room, but will not be subjected to accidental contact. Adequate clearance must be available around the air opening. See figures 2, 3 and 4 for clearances that must be maintained to the side walls, floor and horizontal surface above the heater.



### INSTALLING

1. Install mounting brackets on wall as shown in Figure 3 use enclosed "paper template" for proper location of hole see Figure 4. (It may be necessary to use plastic or lead anchors for plaster walls).

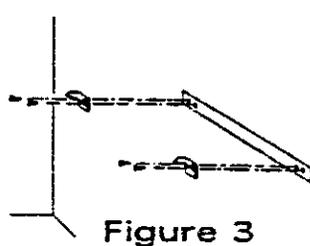


Figure 3

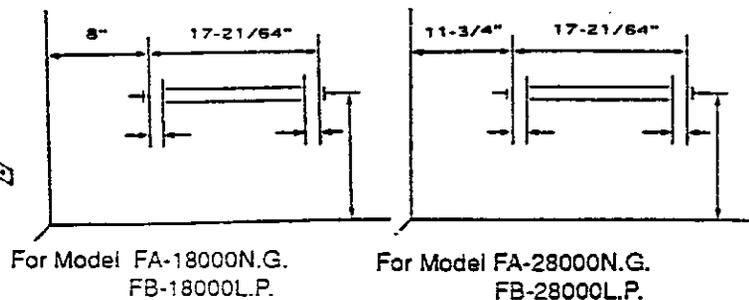


Figure 4

**INSTALLATION  
(CONTINUED)**

2. After mounting brackets are installed hang heater on mounting brackets in holes provided at the rear of heater. (see Figure 5)

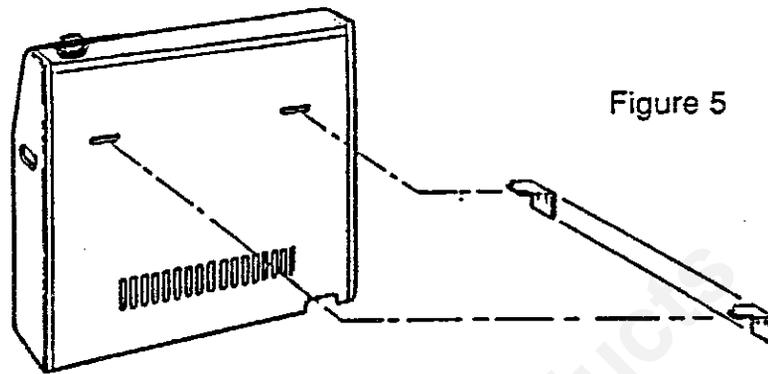


Figure 5

3. In unconfined spaces in buildings, infiltration normally is adequate to provide air for combustion and ventilation. In confined spaces, the confined space shall be provided with two permanent openings adjoining directly with an additional room(s) of sufficient volume so that the combined volume of all spaces meets the criteria for unconfined space. Each opening shall have no less than 100 square inches of free area.
4. Clearance from combustible construction. See figures 2.

**WALL MOUNTED**

Rear . . . . .	0 Inches
Sides . . . . .	6 Inches
Top . . . . .	36 Inches
Floor . . . . .	6 Inches

**FLOOR MOUNTED WITH THE BASE PROVIDED**

Rear . . . . .	0 Inches
Sides . . . . .	6 Inches
Top . . . . .	36 Inches
Floor . . . . .	0 Inches

From top surface of carpeting, tile or other combustible material.

**NOTICE**

Maintain the minimum clearances shown in Figure 2 (page 7). If you can, provide greater clearances from floor, ceiling, and joining wall.

5. Installation and repair should be done by a qualified service person. The

## INSTALLATION (CONTINUED)

room heater should be inspected before use and at least annually by a professional service person. More frequent cleaning may be required due to excessive lint from carpeting & other material etc. It is imperative that he control compartments, burners and circulating air passageways of the room heater be kept clean.

### \*\*\* WARNING \*\*\*

**IF YOU DO NOT FOLLOW THESE INSTRUCTIONS EXACTLY, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE.**

6. If the heater is installed in a residential garage, the following precautions must be taken.

- \* The heater pilot and burner must be at least 24 inches above the floor.
- \* The heater must be located and protected, so as not to be subjected to damage by a moving vehicle.
- \* All flammable fuels must be removed.

### \*\*\* CAUTION \*\*\*

**DUE TO HIGH TEMPERATURE, THE APPLIANCE SHOULD BE LOCATED OUT OF TRAFFIC, AND AWAY FROM FURNITURE AND DRAPERIES.**

## GAS PIPING

### GAS CONNECTION (Figure 6 )

1. We recommend using only new black iron or steel pipe. Copper tubing may be acceptable. **CHECK LOCAL CODES**
2. The gas supply line shall be sized and installed to provide a sufficient supply of gas to meet the maximum demand of the heater without undue loss of pressure.
3. The sealant used on the threaded joints of the gas pipe must be a type resistant to the action of N.G. gas. (This sealant should be applied lightly to main threads to ensure excess sealant does not enter lines.)
4. The supply system must include a manual shut off valve and connection in the line, so the heater can be disconnected for servicing.
5. Include a drip leg (trap) and a plugged 1/8" N.P.T. tapping in the line. The tapping should be accessible for test gauge connections upstream of the gas supply connection to the heater.

## INSTALLATION (CONTINUED)

IMPORTANT: Hold pressure regulator with wrench when connecting it to gas piping and/or fittings.

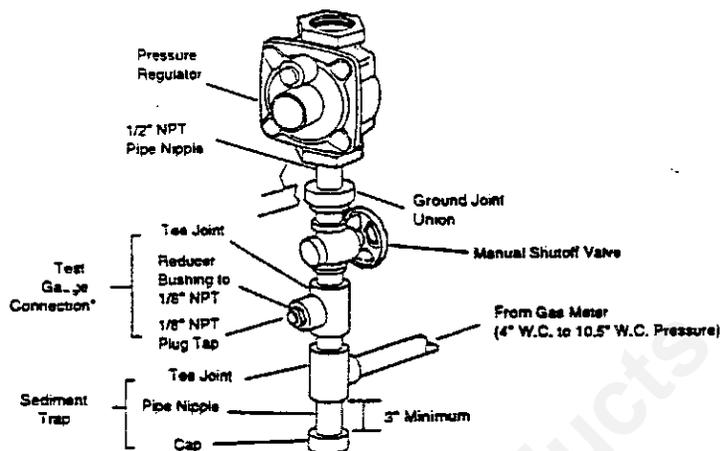


Figure 6-Gas Connection

\*an A.G.A. design-certified manual shutoff valve with 1/8" NPT tap is an acceptable alternative to test gauge connection. Purchase the optional A.G.A. design-certified manual shutoff valve from your dealer.

### CHECK AFTER GAS CONNECTION

**WARNING: All gas piping and connections must be tested for leaks after installation or servicing. All leaks must be corrected immediately.**

1. Make sure the control of the heater is in the "OFF" position
2. Open the manual shutoff valve. Test for leaks by applying liquid detergent to all joints.

**\*\*\* CAUTION \*\*\***

### NEVER USE AN OPEN FLAME TO CHECK FOR LEAKS

3. Check all joints from gas meter to thermostat gas valve (see Figure 8). Correct any leak defect at once. (Bubbles forming indicate a gas leak)

### PRESSURE TESTING SUPPLY LINE

1. The heater and its individual manual shutoff valve must be disconnected from the gas supply piping during any pressure testing of that system at pressures in excess of 1/2 p.s.i.g.
2. The heater must be isolated from the gas supply piping system by closing its individual manual shutoff valve, during any pressure testing of the gas supply piping system at pressures equal to or less than 1/2 p.s.i.g.

## INSTALLATION (CONTINUED)

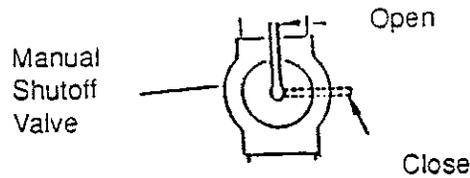


Figure 7-Manual Shutoff Valve

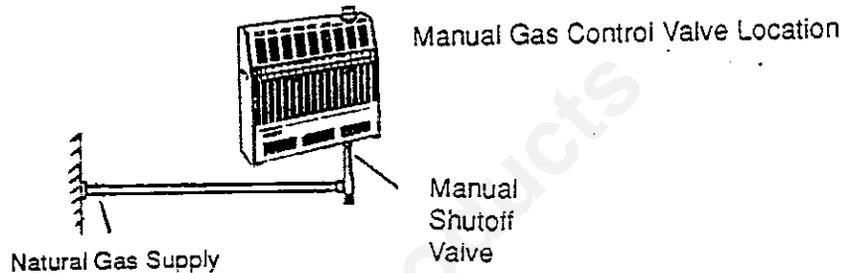


Figure 8 - Checking Gas Joints

## OPERATION

**\*\*\* FOR YOUR SAFETY READ BEFORE LIGHTING\*\*\***

### **\*\*WARNING\*\***

If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

1. This unit has a pilot which must be lighted by hand. When lighting the pilot, follow these instructions exactly.
2. Before lighting smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

### **WHAT TO DO IF YOU SMELL GAS**

- A. Do not try to light any appliance.
  - B. Do not touch any electric switch; do not use any phone in your building.
  - C. Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
  - D. If you cannot reach your gas supplier, call the fire department.
3. Use only your hand to push in or turn the gas control knob. Never use tools. If the knob will not push in or turn by hand, don't try to repair it, call a qualified service technician or gas supplier. Force or attempted repair may result in fire or explosion.
  4. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

**OPERATION**  
**Continued**

**OPERATING INSTRUCTIONS**

FOR MODEL NO: FA-18000N.G. FA-28000N.G. FGH-28000N.G.  
FB-18000L.P. FB-28000L.P. FGH-28000L.P.

1. **STOP!** Read the safety information.
2. Check that gas supply to the heater is on.
3. Push in gas control knob slightly and turn clockwise to "OFF" (Figure 9)

GAS CONTROL  
KNOB SHOWN  
IN "OFF" POSITION

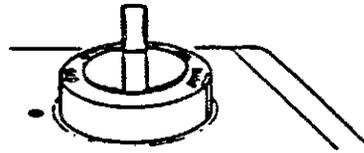


Figure 9

**NOTE:** Knob cannot be turned from "PILOT" to "OFF" unless knob is pushed in slightly. Do not force.

4. Wait five (5) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, **STOP!** Follow "B" in the safety information. If you don't smell gas, go to the next step.
5. Push in gas control knob slightly and turn counterclockwise "PILOT/IGN" and depress for five (5) seconds. (Figure 10)



Figure 10

**NOTE:** The first time that the heater is operated after connecting the gas supply, the control knob should be depressed for about thirty (30) seconds. This will allow air to bleed from the gas system.

6. Release control knob pressure and turn clockwise to OFF. (Figure 11)

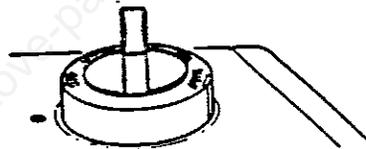


Figure 11

7. Depress control knob while OFF, then turn back to PILOT/IGN. This should cause the spark from the piezo ignitor to light the pilot gas. Keep control knob depressed for ten (10) seconds before releasing. (Figure 12) If Pilot does not light, repeat Steps 5, 6 and 7.

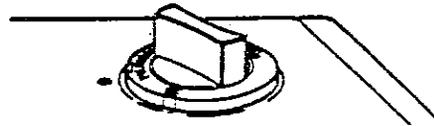


Figure 12

8. To select the heating level desired, partially press down the control knob slightly and rotate counter clockwise. Release the downward pressure on the knob while continuing to turn until the knob locks at the desired setting position. **DO NOT** operate between the locked positions. (Figure 13)

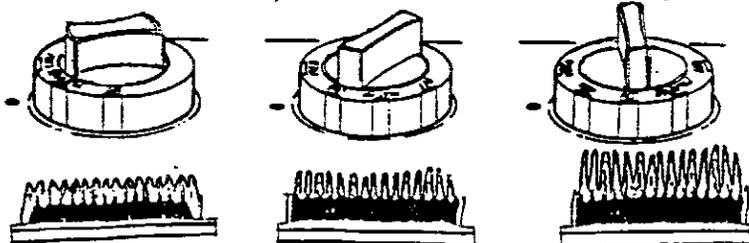
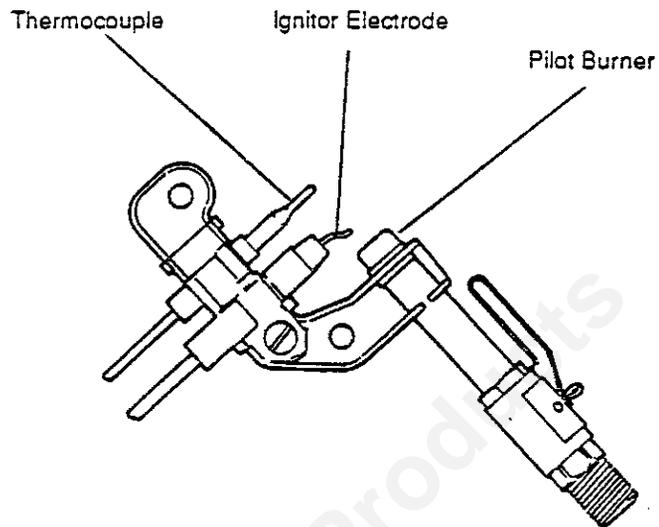


Figure 13

**OPERATION  
(CONTINUED)**



**Figure 14 - Pilot**

Note: If pilot goes out, repeat steps 3 through 7. This heater has interlock system. Wait one minute before lighting pilot again

**TO TURN OFF GAS TO HEATER**

**Shutting Off Heater**

1. Turn control knob clockwise  to the OFF position.

**Shutting Off Burner Only (pilot stays lit)**

1. Turn control knob clockwise  to the PILOT position.

**CAUTION**

Do not try to adjust heating levels by using the manual shutoff valve.

**OPERATION  
(CONTINUED)**

**MANUAL LIGHTING PROCEDURE**

1. Remove low front panel.
2. Follow steps 1 through 5 under lighting instructions, pages 11 and 12.
3. With control knob pressed in, strike match. Hold match to pilot until pilot lights.
4. Keep control knob pressed in for 30 seconds after lighting pilot. After 30 seconds, release control knob.
5. Replace low front panel.

**INSPECTING  
BURNER**

**PILOT FLAME PATTERN**

Figure 11 shows a correct pilot flame pattern. Figure 12 shows an incorrect pilot flame pattern. The incorrect pilot flame is not touching the thermocouple. This will cause the thermocouple to cool. When the thermocouple cools, the heater will shut down.

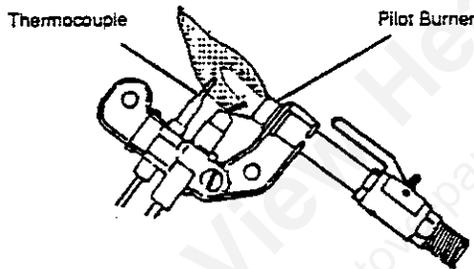


Figure 15 -Correct Pilot Flame Pattern

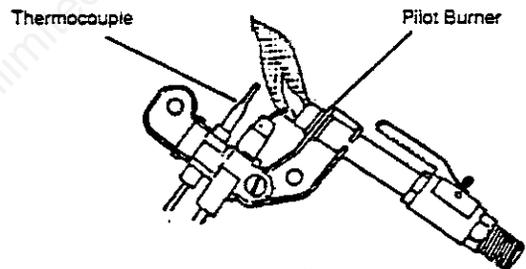
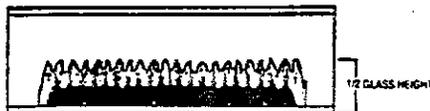


Figure 16 -Incorrect Pilot Flame Pattern

If pilot flame pattern is incorrect, as shown in figure 12  
\*turn heater off(see to Turn Off Gas to Appliance, page 13.)  
\*see TROUBLESHOOTING, PAGES 15 through 18.

**BURNER FLAME PATTERN**

Figure 13 shows a correct burner flame pattern. Figure 14 shows an incorrect burner flame pattern. The incorrect burner flame pattern shows yellow tipping of the flame. It also shows the flame higher than 1/2 the glass panel height.



CORRECT FLAME PATTERN  
AT HIGH POSITION  
Figure 17



INCORRECT FLAME PATTERN  
AT HIGH POSITION  
Figure 18

**INSPECTING  
BURNER  
(CONTINUED)**

**WARNING**

IF YELLOW TIPPING OCCURS, YOUR HEATER COULD PRODUCE INCREASED LEVELS OF CARBON MONOXIDE. IF BURNER FLAME PATTERN SHOWS YELLOW TIPPING, FOLLOW INSTRUCTIONS AT BOTTOM OF THIS PAGE.

**NOTICE**

Do not mistake orange flames with yellow tipping. Dirt or other fine particles enter the heater and burn causing brief patches of orange flame.

**CLEANING  
AND  
MAINTENANCE**

**WARNING**

Turn off heater and let cool before cleaning.

**CAUTION**

You must keep control areas, burner, and circulating air passageways of heater clean. Inspect these areas of heater before each use. Have heater inspected yearly by a qualified service person. Heater may need more frequent cleaning due to excessive lint from carpeting, bedding material, etc.

**ODS/PILOT AND BURNER**

\*Use a vacuum cleaner, pressurized air, or small, soft bristled brush to clean.

**CABINET**

**Exterior**

\*Use a soft cloth dampened with a mild soap and water mixture. Wipe the cabinet to remove dust.

**Air Passageways**

\*Use a vacuum cleaner or pressurized air to clean.

**TROUBLE-  
SHOOTING**

**CAUTION**

Never use a wire, needle, or similar object to clean ODS/pilot. This can damage ODS/pilot unit.

**WARNING**

Turn off and unplug heater and let cool before servicing. Only a qualified service person should service and repair heater.

TROUBLE-SHOOTING (CONTINUED)	OBSERVED PROBLEM	POSSIBLE CAUSE	REMEDY
	When ignitor button is pressed, there is no spark at ODS/pilot.	<ol style="list-style-type: none"> <li>1. Ignitor electrode positioned wrong</li> <li>2. Ignitor electrode broken</li> <li>3. Ignitor electrode not connected to ignitor cable</li> <li>4. Ignitor cable pinched or wet</li> <li>5. Piezo ignitor nut is loose</li> <li>6. Broken ignitor cable</li> <li>7. Bad piezo ignitor</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace ignitor</li> <li>2. Replace ignitor</li> <li>3. Reconnect ignitor cable.</li> <li>4. Free ignitor cable if pinched by any metal or tubing. Keep ignitor cable dry</li> <li>5. Tighten nut holding piezo ignitor to heater cabinet. Nut is located inside heater cabinet at top</li> <li>6. Replace ignitor cable</li> <li>7. Replace piezo ignitor</li> </ol>
	When ignitor button is pressed, there is spark at ODS/pilot but no ignition	<ol style="list-style-type: none"> <li>1. Gas supply turned off or manual shutoff valve closed</li> <li>2. Control knob not in PILOT position</li> <li>3. Control knob not pressed in while in pilot position</li> <li>4. Air in gas lines when installed</li> <li>5. ODS/pilot is clogged</li> <li>6. Gas regulator setting not correct</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn on gas supply or open manual shutoff valve</li> <li>2. Turn control knob to PILOT position</li> <li>3. Press in control knob while in PILOT position</li> <li>4. Continue holding down control knob. Repeat igniting operation until air is removed</li> <li>5. Clean ODS/pilot (see Cleaning and maintenance, page 15) or replace ODS/pilot assembly</li> <li>6. Replace gas regulator</li> </ol>
	ODS/pilot lights but flame goes out when control knob is released	<ol style="list-style-type: none"> <li>1. Control knob not fully pressed in</li> </ol>	<ol style="list-style-type: none"> <li>1. Press in control knob fully</li> </ol>

TROUBLE-SHOOTING	OBSERVED PROBLEM	POSSIBLE REMEDY	REMEDY
		<ul style="list-style-type: none"> <li>2. Control knob not pressed long enough</li> <li>3. Safety interlock system has been triggered</li> <li>4. Manual shutoff valve not fully open</li> <li>5. Thermocouple connection loose at control valve</li> <li>6. Pilot flame not touching thermocouple, which allows thermocouple to cool, causing pilot flame to go out. This problem could be caused by one or both of the following:               <ul style="list-style-type: none"> <li>a. Low gas pressure</li> <li>b. dirty or partially clogged ODS/pilot</li> </ul> </li> <li>7. Thermocouple damaged</li> <li>8. Control valve damaged</li> </ul>	<ul style="list-style-type: none"> <li>2. After ods/pilot lights, keep control knob pressed in 30 seconds</li> <li>3. Wait one (1) minute for safety interlock system to reset. Repeat ignition operation</li> <li>4. Fully open manual shut-off valve</li> <li>5. Hand tighten until snug, then tighten 1/4 turn more</li> <li>6. a. Contact local gas company. b. Clean ODS/pilot (see Cleaning and Maintenance, page 15) or replace ODS/pilot assembly</li> <li>7. Replace thermocouple</li> <li>8. Replace control valve</li> </ul>
	Burner does not light after ODS/pilot is lit	<ul style="list-style-type: none"> <li>1. Burner orifice is clogged</li> <li>2. Burner orifice diameter is too small</li> <li>3. Inlet gas pressure is too low</li> </ul>	<ul style="list-style-type: none"> <li>1. Clean burner (see Cleaning and maintenance, page 15) or replace burner orifice</li> <li>2. Replace burner orifice</li> <li>3. Contact local gas company</li> </ul>
	Delayed ignition of burner	<ul style="list-style-type: none"> <li>1. Manifold pressure is too low</li> </ul>	<ul style="list-style-type: none"> <li>1. Contact local gas company</li> </ul>

TROUBLE-SHOOTING (CONTINUED)	OBSERVED PROBLEM	POSSIBLE REMEDY	REMEDY
		2. Burner orifice is clogged	2. Clean burner (see Cleaning and maintenance, page 15) or replace burner orifice
	Burner backfiring during combustion	1. Burner orifice is clogged or damaged 2. Burner damaged 3. Gas regulator defective	1. Clean burner (see Cleaning and maintenance, page 15) or replace burner orifice 2. Replace burner 3. Replace gas regulator
	Yellow flame during burner combustion	1. Not enough air 2. Gas regulator defective	1. Check burner for dirt and debris. If found, clean burner (see Cleaning and maintenance, page 15) 2. Replace gas regulator
	Slight smoke or odor during initial operation	1. Residues from manufacturing processes	1. Problem will stop after a few hours of operation
	Heater produces a whistling noise when burner is lit	1. Turning control knob to HI position when burner is cold 2. Air in gas line 3. Air passageways on heater blocked 4. Dirty or partially clogged burner orifice	1. Turn control knob to LO position and let warm up for a minute 2. Operate burner until air is removed from line. Have gas line checked by local gas company 3. Observe minimum installation clearance (see Figure 2, page 7) 4. Clean burner (see Cleaning and maintenance, page 15) or replace burner orifice

**TROUBLE-SHOOTING (CONTINUED)**

**OBSERVED PROBLEM**

**POSSIBLE REMEDY**

**REMEDY**

Heater produces a clicking/ticking noise just after burner is lit or shut off

1. Metal expanding while heating or contracting while cooling

1. This is common with most heaters. If noise is excessive, contact qualified service person

Heater produces unwanted odors

1. Heater burning vapors from paint, hair spray, glues, etc. See **IMPORTANT** statement below
2. Gas leak. See **WARNING** statement in below

1. Ventilate room. Stop using odor causing products while heater is running
2. Locate and correct all leaks (see **Checking Gas Connections**, page 9)

Heater shuts off in use (ODS operates)

1. Not enough fresh air is available
2. Low line pressure
3. ODS/pilot is partially clogged

1. Open window and/or door for ventilation
2. Contact local gas company
3. Clean ODS/pilot (see **Cleaning and maintenance**, page 15)

Gas odor even when control knob is in OFF position

1. Gas leak. See **WARNING** statement below
2. Control valve defective

1. Locate and correct all leaks (see **Checking Gas Connections**, Page 10)
2. Replace control valve

**WARNING**

**IF YOU SMELL GAS**

- \* Shut off gas supply.
- \* Do not try to light any appliance.
- \* Do not touch any electrical switch; do not use any phone in your building.
- \* Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- \* If you cannot reach your gas supplier, call the fire department.

**TROUBLE-  
SHOOTING  
(CONTINUED)**

**IMPORTANT:** Operating heater where impurities in air exist, may create odors. Cleaning supplies, paint, paint remover, cigarette smoke, cement and glues, new carpet or textiles, etc., create fumes. These fumes may mix with combustion air and create odors.

**SERVICE  
AND  
MAINTENANCE**

**WARNING**

Turn off heater and let cool before cleaning.

**REPLACEMENT PARTS**

**NOTE:** In order for you to receive credit for parts replaced under warranty, only original replacement parts must be used and defective parts must be returned to **UNIVERSAL HEATING, INC.** or the authorized distributor.

**A. UNDER WARRANTY:**

Contact authorized dealers of this product. If they are unable to supply original replacement part(s), call **UNIVERSAL HEATING, INC.** Be prepared to indicate name, address, model number, and how heater was malfunctioning, type of gas used and purchase date. In most cases, the defective part will be requested to be returned to the authorized distributor of **UNIVERSAL HEATING, INC.**

**B. NOT UNDER WARRANTY:**

Contact authorized dealers of this product. If they are unable to supply original replacement part(s), call **UNIVERSAL HEATING, INC.** Be prepared to indicate model number and replacement part(s) number.

When calling **UNIVERSAL HEATING, INC.**, have ready

\* model number of your heater.

\* the replacement part number.

**ACCESSORIES**

Purchase these heater accessories from your local dealer. If they can not supply these accessories, call **UNIVERSAL HEATING, INC.'s** Parts Department at (714)985-9000 for information.

**FLOOR MOUNTING STAND**

**FAN KITS**

**ACCESSORIES**

**MANUAL SHUTOFF VALVE.**

## PARTS LIST

KEY NO.	PART NUMBER FOR		DESCRIPTION	QTY
	18000BTU/Hr	28000BTU/Hr		
	FA-18000N.G.	FA-28000N.G.		
	FB-18000L.P.	FB-28000L.P.		
		FGH-28000N.G.		
		FGH-28000L.P.		
1.	FA-95001	FA-95001	Screw	2
2.	FA-95002A	FA-95002B	Low Front Panel	1
3.	FA-95003A	FA-95003B	Grill Guard	1
4.	FA-95004A	FA-95004B	Bottom Glass Retainer	1
5.	FA-95005A	FA-95005B	Glass Panel	1
6.	FA-95006A	FA-95006B	Top Glass Retainer	1
7.	FA-95007A	FA-95007B	Screw	4
8.	FA-95008A	FA-95008B	Deflector Unit	1
9.	FA-95009	FA-95009	Ignitor Cable	1
10.	FA-950010	FA-950010	Nut M5	2
11.	FA-950011	FA-950011	Pilot Shield	1
12.	FA-950012	FA-950012	ODS/Pilot Assembly	1
12-1	FA-950012-1	FA-950012-1	Thermocouple	1
12-2	FA-950012-2	FA-950012-2	Ignitor Electrode	1
13.	FA-950013A	FA-950013B	Burner	1
14.	FA-950014	FA-950014	3/16" Pilot Tubing	1
15.	FA-950015A	FA-950015B	Injector	1
16.	FA-950016	FA-950016	Injector Holder	1
17.	FA-950017	FA-950017	3/8" outlet (Burner) Tubing	1
18.	FA-950018	FA-950018	Pressure Regulator	1
19.	FA-950019	FA-950019	3/8" Inlet Tubing	1
20.	FA-950020	FA-950020	3/8" NPT Male Connector	1
21.	FA-950021	FA-950021	1/8" NPT Plug	1
22.	FA-950022A	FA-950022B	Pilot unit mounting bracket	1
23.	FA-950023	FA-950023	3/8" NPT Male Elbow	1
24.	FA-950024	FA-950024	3/8" NPT Plug	1
25.	FA-950026	FA-950026	Grill Guard Mounting unit	2
26.	FA-950027A	FA-950027B	Cabinet	1
27.	FA-950028	FA-950028	Piezo Ignitor	1
28.	FA-950029	FA-950029	Mounting Bracket	1
29.	FA-950030	FA-950030	Screw	2
30.	FA-950031	FA-950031	Screw	4

